

No. 609,282.

Patented Aug. 16, 1898.

P. M. LIBBY.
THREAD GUIDE.

(Application filed Mar. 24, 1897.)

(No Model.)

FIG. 1.

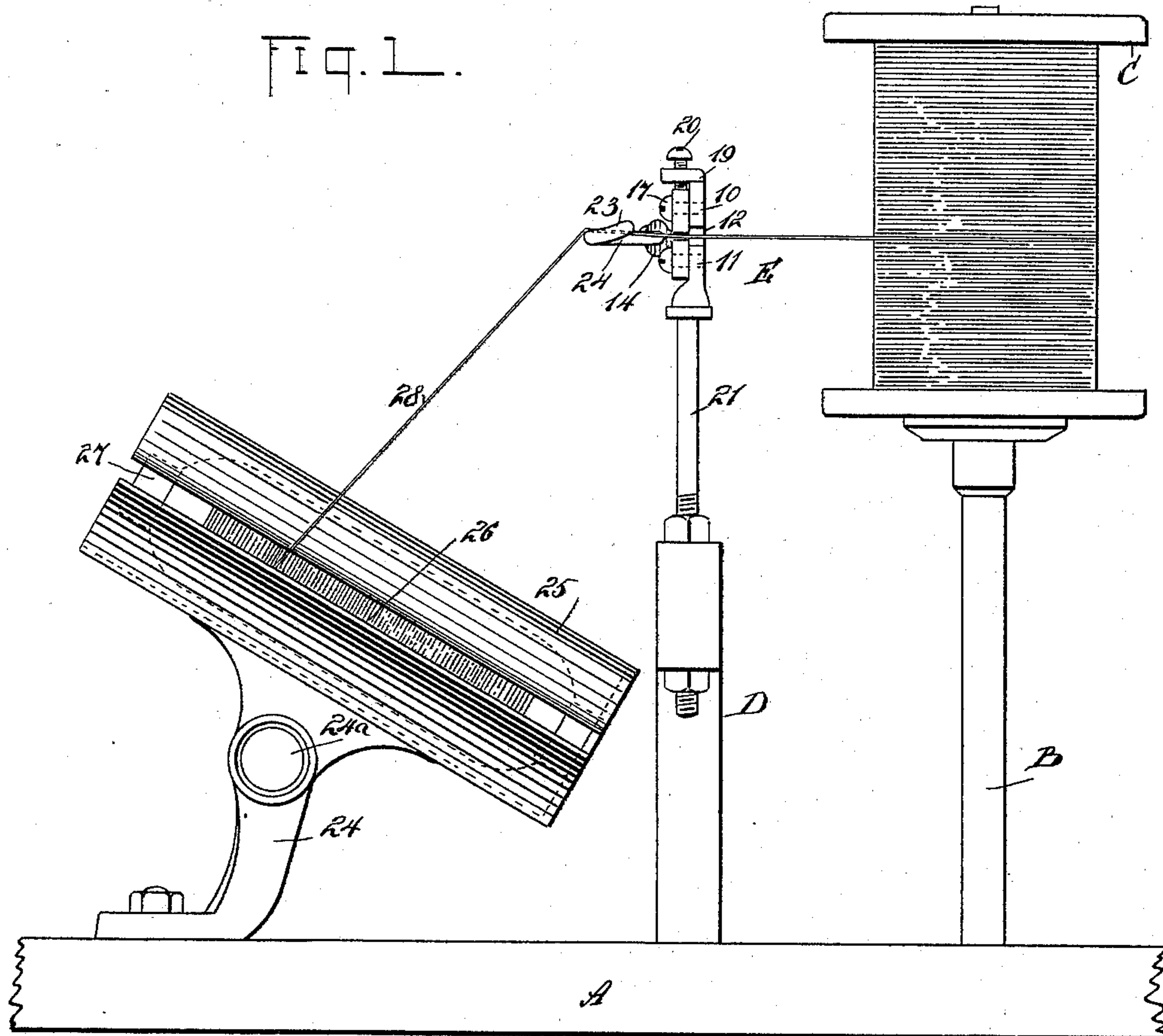
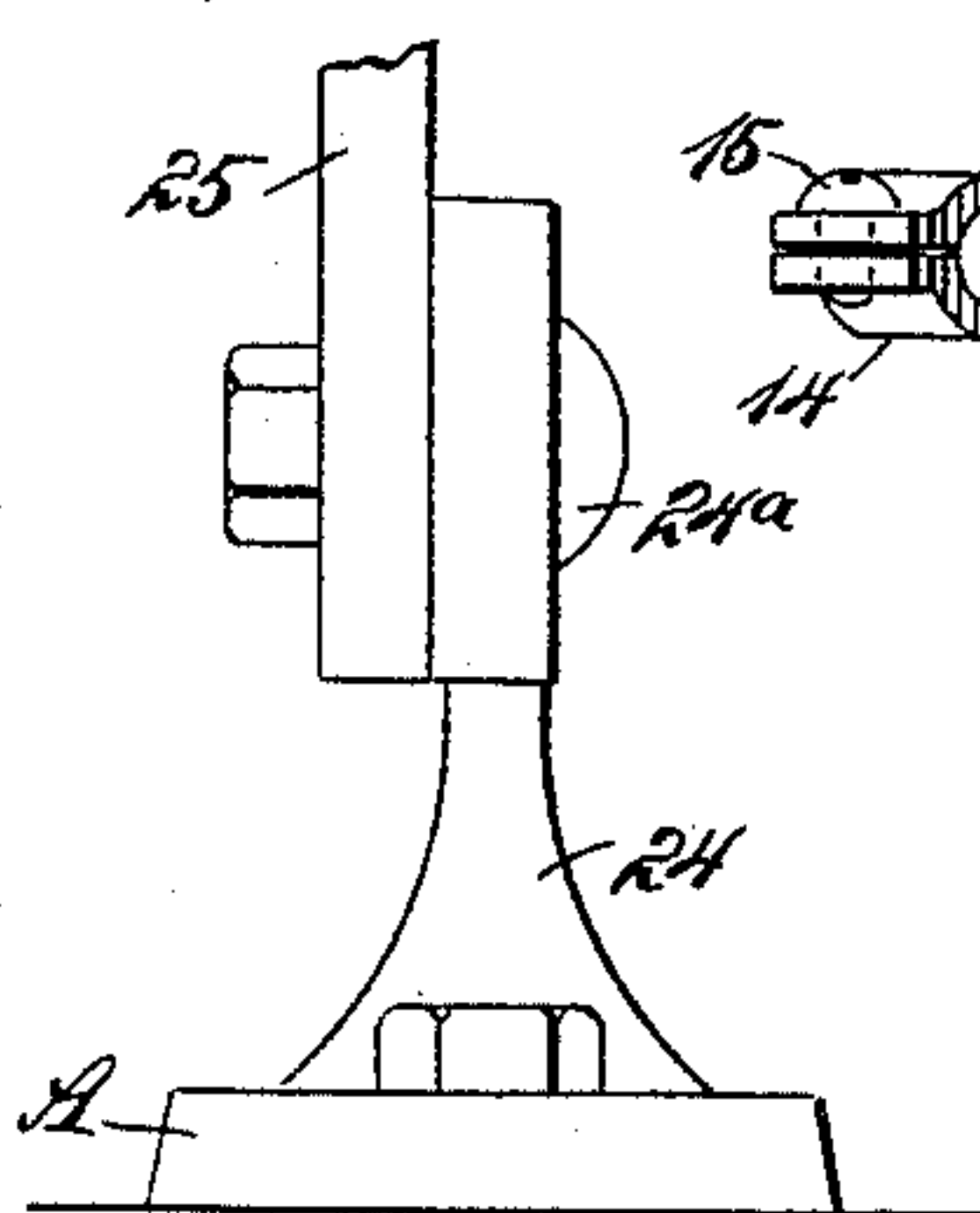


FIG. 2.



WITNESSES:

H. Kelley.
Wm. H. H. H.

FIG. 3.

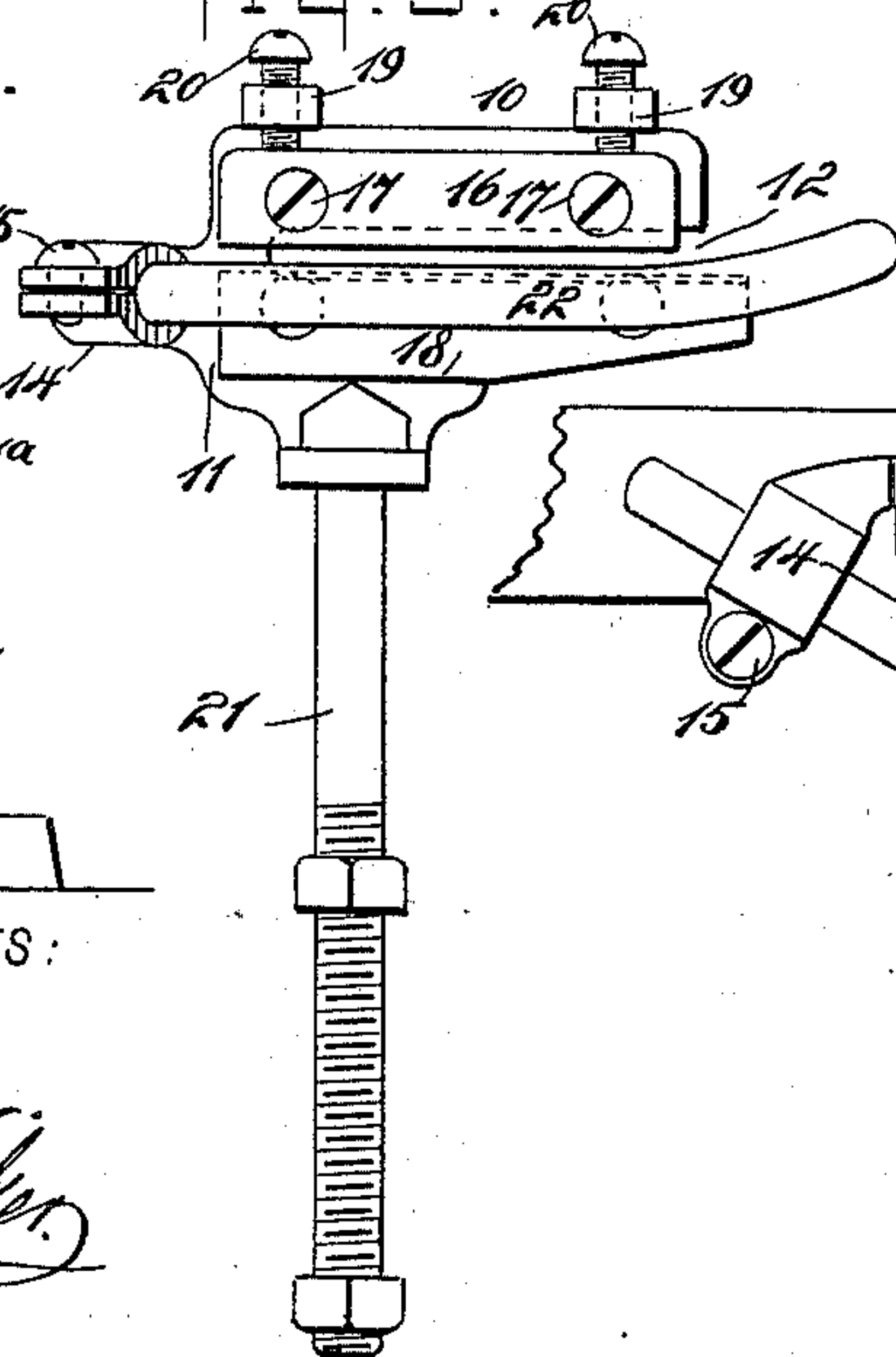
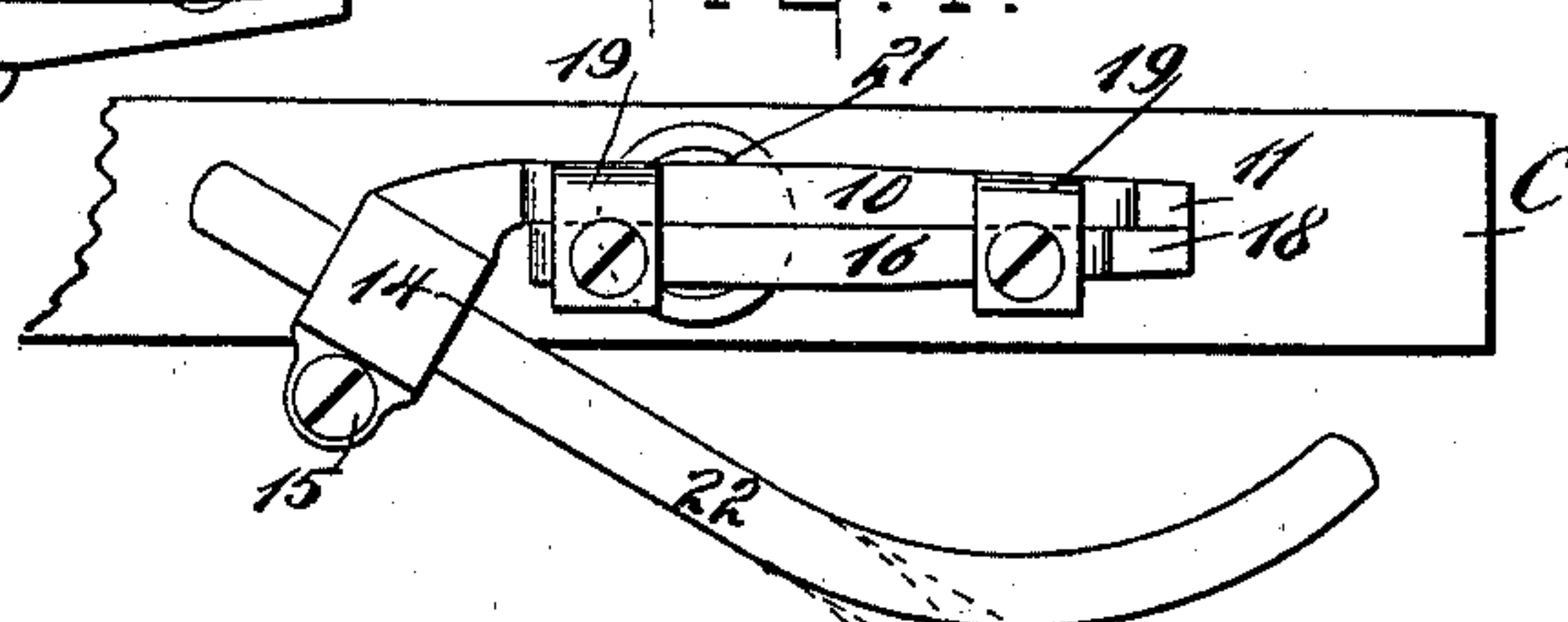


FIG. 4.



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PETER M. LIBBY, OF WATERVILLE, MAINE.

THREAD-GUIDE.

SPECIFICATION forming part of Letters Patent No. 609,282, dated August 16, 1898.

Application filed March 24, 1897. Serial No. 629,014. (No model.)

To all whom it may concern:

Be it known that I, PETER M. LIBBY, of Waterville, in the county of Kennebec and State of Maine, have invented a new and Improved Thread-Guide, of which the following is a full, clear, and exact description.

The object of my invention is to provide a guide device adapted for attachment to spooling-machines for winding or spooling cotton yarn or thread from the spinning-bobbin to the spool, the guide device being of such construction that the thread will pass through it from the spinning-bobbin to the spool in such manner that the thread will be by no possibility chafed or worn and whereby all projections—such as knots, &c.—on the thread will be removed therefrom prior to the thread reaching the spool.

Another object of the invention is to so secure the bobbin-casing or shuttle that it will stand at such an angle with respect to the spool and the guide as to admit of the thread passing from the spinning-bobbin to the guide with the least possible amount of friction.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a portion of a spooling-machine, showing the guide in end view. Fig. 2 is an edge view of the improved support for the bobbin-casing. Fig. 3 is a front elevation of the improved guide, and Fig. 4 is a plan view of the guide.

A represents a stationary rail of a spooling-machine, B the usual revolving spindle on which the spool C to be wound is carried, and D is a support adapted to vertically reciprocate in front of the spindle B in order that the guide E may be carried in the usual manner up and down the spool to properly distribute the thread thereon.

The frame of the guide is in the nature of a fork, comprising two connected prongs 10 and 11, said prongs being horizontally disposed. The lower prong 11 is preferably of greater length than the upper prong 10, as shown in Fig. 4, and a regular space 12 is provided

between the two prongs. An angular socket 14 is formed at the closed end of the frame at or about a central point between the top and the bottom, the said socket extending forwardly beyond the front face of the frame. The said socket may be in one piece or it may be split and its separated portions be connected by a binding-screw 15, as illustrated. Two guide-plates are employed in connection with the guide-frame, located at the front. The upper guide-plate 16 is adjustably secured to the upper prong 10 by means of set-screws 17, suitable slots being made in the upper plate, while the lower plate 18 is stationarily attached to the lower prong 11 and is carried slightly above the upper edge of the said prong. The upper guide-plate 16 is adapted to be adjusted to and from the lower plate, so that the space between the two plates may be increased or decreased, as desired. The upper guide-plate 16 is of less length than the upper prong of the forked frame.

Lugs 19 are horizontally and forwardly projected from the upper edge of the upper fork 10 of the frame over the upper guide-plate 16, and binding-screws 20 are carried by these lugs, engaging with the upper edge of the upper guide-plate, as shown in Figs. 1 and 3. A rod 21 is attached to the bottom of the forked frame, being secured to the reciprocating frame or support D in any approved manner. A guide-finger 22 is secured at one of its ends in the socket 15 in the guide-frame. This guide-finger is preferably made of stout wire and is given an inclination, being carried in front of, yet removed from, the space between the two guide-plates. The guide-finger 22 is, furthermore, curved, especially at its free end, the free extremity 23 being carried upward above the plane of the top of the body, as shown in Fig. 1. In Fig. 4 I have illustrated in dotted lines possible adjustments of this guide-finger.

An angular stand 24 is secured upon the stationary rail A, and to the upwardly-extending member of this stand the holder 25 for a spinning-bobbin 26 is adjustably secured by means of a screw 24^a or its equivalent. Usually the spinning-bobbin is set at an angle of about seventy-five to eighty-five degrees to the rail. An opening 27 is made in the holder 25, through which the thread 28

from the spinning-bobbin is passed, the said thread being carried over the guide-finger 22 and through the space between the guide-plates and the prongs of the forked frame to an engagement with the spool to be wound.

The top guide-plate is entirely protected from all accidents incidental in spooling-departments, being protected from the top by the projecting lugs 19, through which the binding-screws work, from the left-hand end by the socket 14, which holds the guide-finger, and from the right-hand end by the top prong 10 of the forked frame being longer than the top plate. If the guide-plate is exposed to such accidents as dropping full and empty spools, cleaning with brushes, &c., it cannot be kept in its proper place. Consequently the plate out of position injures the yarn or thread by chafing it if the plates are too close together, and if too far apart would permit bunches, motes, &c., to pass through, which should be extracted by the plates. The curved or inclined guide-finger 22 is placed in the socket of the guide-frame, as heretofore stated, being held in position by the binding-screw 15. The advantages of the curved or inclined guide-finger are the wire forming the finger will not become notched, but will become smoother the longer it is used. Therefore it cannot fray, chafe, or injure the yarn or thread. The guide-finger can be set in position by loosening the screw in the socket and turning the curved point or end of the finger upward, downward, forward, or backward, or in any position between the four given points and retain the same motion of thread or yarn.

With the use of the curved or inclined guide-finger the yarn or thread is continuously in motion, rolling backward and forward, up and down the incline, and instead of lessening the fibers and chafing and flattening the yarn or thread, guides it in its natural condition, and a smooth round surface is retained.

The curved or inclined guide-finger, with the bobbin holder or casing 25 attached to the angular stand, gives the yarn or thread a complete traverse movement, therefore throwing the foreign matter from the yarn or thread, which foreign matter has been heretofore a great source of annoyance by clogging between the two guide-plates, chafing or breaking the yarn or thread, and making from five to twenty per cent. more knots. The variation in the per cent. of knots as given above is due to the different quality of stock used. The more foreign matter there is on the yarn or thread with the present systems in use the more breaking and chafing, &c., and therefore more knots. With my device, compared with other systems in use, the above per cent., found from actual test, is positively correct. If properly adjusted, it will also extract all bunches, motes, &c., that would be more detrimental than knots. Again, repeated tests have demonstrated that with the improved device attached to the spooling-ma-

chine an employee can do at least thirteen per cent. more work and of better quality.

It is evident that the guide-finger 22 not only serves as a guide for the thread preparatory to its reaching the space between the guide-plates, but also constitutes a support for the thread in advance of its reaching the guide proper.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A guide for spooling-machines, provided with a slot through which the thread is adapted to run in its course from the bobbin to the spool, and a supporting-finger in front of said slot and over which the thread passes, the said finger being mounted to turn axially and extending at an acute angle to the direction of said slot, as set forth.

2. A guide for spooling-machines, consisting of a frame provided with a horizontal guide-slot through which the thread is adapted to pass in its course from the bobbin to the spool, and a supporting-finger carried by said frame and rotatably adjustable thereon, the said finger having an inclination away from said slot, and the free end of said finger being curved, substantially as described.

3. A guide for spooling-machines provided with a slot through which the thread is adapted to pass in its course from the bobbin to the spool, and a curved supporting-finger held in front of said slot and having its end secured in a socket arranged at an angle to the guide, the said finger being mounted to turn axially in said socket and having an inclination away from the slot, substantially as described.

4. A guide for spooling-machines consisting of a frame, guide-plates carried by said frame and spaced apart forming a horizontal guide slot or opening, and a supporting-finger carried by said frame and rotatably adjustable thereon, said finger extending at an acute angle to the direction of the guide-slot and having its free end upwardly inclined, as specified.

5. The combination with the forked frame, and guide-plates carried by the members of said fork, of a socket offset from the closed end of the frame, and a curved guide or supporting finger held rotatably adjustable by the said socket at one of its ends, the said guide or supporting finger having an inclination and being carried in front of the space between the guide-plates, the free end of the said guide or supporting finger being carried upward above the plane of the top of the body of the finger, as and for the purpose set forth.

6. In a guide for spooling-machines, a frame provided with guide-plates between which the thread passes from the bobbin to the spool, a socket formed on said frame and arranged at an inclination to the guide-plates, and a guide or supporting finger having one end secured in said socket and rotatably ad-

justable therein, the said guide-finger extending in front of the space between the guide-plates and having an inclination away from said plates, substantially as shown and described.

7. A thread-guide for spooling-machines provided with a supporting-finger over which the thread passes, the said supporting-finger being mounted to turn axially and extending at an inclination in front of the guide, substantially as described.

8. The combination of the thread-guide provided with a horizontal slot or opening, a spool on which the thread is wound, a guide or supporting finger over which the thread passes, the said guide-finger extending in front of the guide-opening and having an inclination away from said guide-opening, and a bobbin-holder arranged at an acute angle to the line of direction of said guide-slot, substantially as set forth.

9. In a spooling-machine, the combination of a thread-guide provided with a horizontal slot through which the thread is adapted to run, a bobbin-holder located at an acute angle to the line of direction of said guide-slot, and a supporting-finger rotatably adjustable and over which the thread passes from the bobbin of the holder, the said finger being held in front of said slot and extending at an

acute angle to the direction thereof, substantially as shown and described.

10. In a spooling-machine, a stand, a bobbin-holder connected with the said stand, the said bobbin-holder being at an angle to the support for the stand and at an acute angle to the line of direction of the guide-slot through which the thread is to be conducted from the bobbin of the holder, and a curved supporting-finger over which the thread is carried, the said finger being rotatably adjustable and extending in front of the guide and having an inclination away from said guide, substantially as set forth.

11. In a spooling-machine an angular stand secured upon the frame of the machine, a bobbin-holder carried by the said stand, a guide to which the thread is to be conducted from the bobbin of the holder, the said bobbin-holder being at an angle to the support for said stand and at an acute angle to the guide and a supporting-finger over which the thread passes, the said finger extending at an inclination in front of the guide, substantially as described.

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Witnesses:

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L. M. BENSON.